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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/594,936

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Kazuyuki Inoguchi

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EXAMINER

GUGLIOTTA, NICOLE T

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/594,936	<b>Applicant(s)</b> INOUCHI ET AL.	
	<b>Examiner</b> NICOLE T. GUGLIOTTA	<b>Art Unit</b> 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 April 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 - 5, 7, 9 - 11, 22, 25, 27 is/are pending in the application.
- 4a) Of the above claim(s) 25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 - 5, 7, 9 - 11, 22, 27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 29, 2009 has been entered.

### ***Examiner's Note***

2. Examiner acknowledges claims 6, 8, 12 – 21, 23 – 24, 26 and 28 have been cancelled, and claims 1, 25, and 27 have been amended. Claim 25 was previously withdrawn as a non-elected claim.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. **Claims 1, 7 & 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Arpac et al. (WO 99/52964).**

***Note: US 6,620,514 B1 B1 has been used by the Examiner as an English language equivalent and will be cited below.***

In regard to claim 1, Arpac et al. disclose a coating containing an organic-inorganic composite. Organically modified alkoxysilanes,  $R'_{4-x}Si(OR)_x$  (Col. 3, Lines 54 - 60), undergo addition-polymerization (including polyaddition) or condensation-polymerization reaction (Col. 4, Lines 14 - 18). Hydrophilic organic polymers, such as 2-hydroxyethyl (meth)acrylate, may be incorporated into the composition (Col. 6, Lines 40 - 46). Other organic polymers may include polyethylene glycol (Col. 10, Line 7). For coating purposes, the composition may be thermally cured, forming inorganic networks (Col. 2, Lines 36 - 42). These coatings increase scratch and abrasion resistance (Col. 7, Lines 39 - 43).

In regard to Applicant's limitation that the coating not separate from the substrate after application of a Taber Abrasion Test, Arpac et al. disclose the Taber abrasion test was applied at 1000 cycles, with a load of 500 g, with no report of separation of the coating from the substrate. Therefore, it would be reasonable to believe the coating of Arpac et al. remained adhered to the substrate after applying the Taber abrasion test.

5. In regard to claim 7, Arpac et al. disclose the sol which is used may comprise phosphates (Col. 3, Line 45).

6. In regard to claim 22, Arpac et al. disclose the coating is applied to a glass substrate (Col. 7, Lines 28 - 33).

**7. Claims 1 – 5, 7, 9, 10, 22, & 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Mennig et al. (WO 01/30922, submitted by Applicant on 10/16/2008).**

***Note: US 6,855,396 B1 has been used by the Examiner as an English language equivalent and is cited below.***

In regard to claims 1, 10, and 27, Mennig et al. disclose coating composition comprising a polycondensate (a polymer produced by a condensation reaction) based upon one or more silanes of the general formula  $R_aSiX_{(4-a)}$ , in which the hydrolysable group X is  $C_{1-6}$  alkoxy (corresponds to Applicant's "siloxane polymer") (Col. 3, Lines 16 - 41), which may be combined with an organic polymer, such as polyoxymethylene (Col. 6, Line 18), which are hydrophilic.

In regard to Applicant's limitation for the Taber Abrasion Test, it is important to note that the Taber Abrasion Test is not a test for adhesion (as Applicant is trying to apply it). Mennig et al. disclose the coating of their invention has very good adhesion, and after applying the Taber Abrasion test for 1000 cycles and 500g, Mennig et al. is silent in regard to the coating composition separating from the substrate (Col. 14, Lines 33 – 40). Therefore, it would be reasonable to believe the organic-inorganic composite film disclosed by Mennig et al. did not separate from the substrate after applying the Taber Abrasion test carried out at 1000 rotations (cycles) with a load of 500 g applied. In addition, Mennig et al. disclose the addition of nanoscale (inorganic) sol particles, such as indium tin oxide (ITO) (corresponds to Applicant's "fine particles of electrically conductive oxide") (Col. 8, Lines 1 - 24).

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In regard to claims 2 - 4, Mennig et al. disclose the topcoat of their invention preferably has a dry film thickness in the range of 100 - 1000 nm (1000 nm = 1  $\mu$ m) (Col. 11, Lines 39 – 49).

In regard to claim 5, Mennig et al. disclose the abrasion values found with a Taber Abraser in some cases are not more than 1% (Col. 12, Lines 64 - 67), and in other cases between 1 and 3% (Example 6 - Col. 14, Lines 33 - 36).

In regard to claim 7, Mennig et al. disclose examples of the functional groups of the radical R (from the chemical equation  $R_aSiX_{(4-a)}$  discussed above for claim 1) may include a phosphoric acid group (Col. 3, Lines 59 – 63).

In regard to claim 9, Mennig et al. disclose polyoxymethylene (corresponds to Applicant's "polyoxyalkylene") as an organic polymer mixed with the inorganic compounds of the coating (Col. 6, Line 18).

In regard to claim 22, Mennig et al. disclose the substrate to be coated may be glass (Col. 11, Lines 13 – 14).

### ***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. **Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mennig et al., in view of Bock et al. (U.S. Patent No. 6,020,419).**

As previously discussed for claim 5, Mennig et al. disclose the abrasion values found with a Taber Abraser in some cases are not more than 1% (Col. 12, Lines 64 - 67), and in other cases between 1 and 3% (Example 6 - Col. 14, Lines 33 - 36). Mennig et al. disclose the presence of nanoscale particles in their invention. However, Mennig et al. are silent in regard to the amount of nanoscale particles. Bock et al. disclose a transparent composition comprising 0.5 to 25 wt. % of a material consisting of nanoscale primary particles incorporated as solids (Col. 3, Lines 28 -31) for improving scratch resistance (Col. 3, Lines 23 – 26). Therefore, based upon the teachings of Bock et al., it would have been obvious to one of ordinary skill in the art at the time of the invention for the nanoscale particles of Mennig et al. to be added in the amount of 0.5 to 25 wt %, in order to achieve a desirable scratch resistant transparent coating.

### ***Response to Arguments***

10. Applicant argues, "...Terauchi discloses that the inorganic oxide is in a dispersion state and that the inorganic oxide is not polymerized or crosslinked. Thus, Terauchi fails to disclose that the silicon oxide is present in a network structure in a form of siloxane polymer as claims 1 and 27 require" (Remarks, Page 6).

11. Applicant argues, "Okamoto, however, does not remedy the deficiencies of Terauchi" (Remarks, Page 6).

12. Applicant argues, "Kamitani, however, does not remedy the deficiencies of Terauchi" (Remarks, Page 7).

Applicant's arguments, see Remarks, filed April 3, 2009, with respect to the rejection(s) of all pending claims under 103(a) by Terauchi et al. have been fully considered and are persuasive. Terauchi et al. do not explicitly note polymerization or the forming of networks. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Mennig et al. and Arpac et al.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NICOLE T. GUGLIOTTA whose telephone number is (571)270-1552. The examiner can normally be reached on M - F 8:30 - 6 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David R. Sample can be reached on 571-272-1376. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David R. Sample/  
Supervisory Patent Examiner, Art Unit 1794

NICOLE T. GUGLIOTTA  
Examiner  
Art Unit 1794